

BELLCOMM, INC.

955 L'ENFANT PLAZA NORTH, S.W. WASHINGTON, D.C. 20024

B70 09052

SUBJECT: Tektite II Data Management/Handling
Case 103-7

DATE: September 28, 1970

FROM: M. J. Reynolds

ABSTRACT

Tektite II is a seven-month underwater research program to determine the ability of men to live and work usefully under the sea for periods up to three weeks. Seventeen multi-aquonaut crews will participate in the program, supported by a team drawn from government agencies, universities and industry. Bellcomm is responsible for the management of the behavioral data collected by T.V. observers, by the aquanauts and from laboratory analysis of biological samples. Specific activities include:

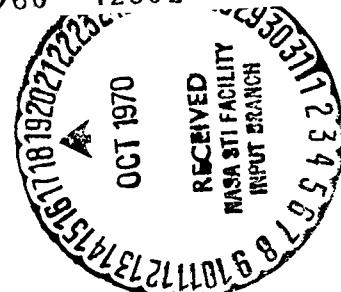
1. receive the off-line punched data (punched after the occurrence of an activity) as well as the on-line punched information on pre-perforated IBM cards.
2. process these cards yielding both weekly reports and specially configured punched data cards for particular users.
3. store the information on magnetic tape for future analysis.

(NASA-CR-113791) TEKTITE 2 DATA
MANAGEMENT/HANDLING, CASE 103-7 (Bellcomm,
Inc.) 18 p

N79-73154

00/60 Unclassified
12802

FF No. 602(c)	18	(THRU)	2C
CR-113791		(CODE)	08
(NASA CR OR TMX OR AD NUMBER)		(CATEGORY)	Y



BELLCOMM, INC.

955 L'ENFANT PLAZA NORTH, S.W. WASHINGTON, D.C. 20024

B70 09052

SUBJECT: Tektite II Data Management/Handling
Case 103-7

DATE: September 28, 1970

FROM: M. J. Reynolds

MEMORANDUM FOR FILE

INTRODUCTION

Tektite II is an underwater research program to evaluate man's ability to live and work usefully beneath the sea for durations up to three weeks. This seven-month endeavor consists of seventeen multi-aquonaut crews and is supported topside by a team drawn from government agencies, industry, as well as from universities. Bellcomm, Inc. is responsible for the management and subsequent storage of the behavioral data collected during the Tektite II long-term experiment. Its role is more fully described in the following sections.

DATA COLLECTION

As in Tektite I¹ (February 15-April 15, 1969), a support van is manned by two observers at a time who monitor the aquanauts via video screens on a twenty-four* hour basis for the duration of the mission. The observers punch pre-perforated IBM cards according to the observed behavior/activity of each crew member at a specified time.² In addition to these porta-punch data cards, information is collected from a time log kept by the aquanauts that is later relayed to IBM cards, and also from data cards processed after biological samples have been processed or studied.

DATA MANAGEMENT/HANDLING

The Tektite II Data Management/Handling operation at Bellcomm is divided into three parts:

1. Manual Handling
2. Weekly Sort and Formatted Output
3. Data Bank Storage

(See Appendix A for the weekly data flow at Bellcomm commencing with the arrival of the data cards from the Virgin Islands.)

*Tektite I monitored aquanauts for eighteen hours per day.

1. Manual Handling

Upon their arrival at Bellcomm, the Tektite II porta-punch cards are duplicated, interpreted, and listed in sequential order. Then, a visual scan is performed on the listing to correct any gross mispunches.

2. Weekly Sort and Formatted Output

The weekly data cards (approximately 2000 cards per week) are read chronologically onto a temporary tape. This tape is then fed into the Format Program (see Appendix B for this flow chart) developed at Bellcomm, yielding output tailored to the diversified requests of the various agencies.

Agency	Requested Visibility
On-Site Virgin Islands	Listing
NASA	Listing
University of Texas	Listing, punched cards

At present, there are seven measures* each depicting various events and activities of the Tektite II crew:

MEASURE IDENTIFICATION	TITLE
01	Aquanaut Status Record
02	Dive Record
03	Gas Usage Record
04	Meal Record
05	Retiring-Duration-Arising Record
06	Communication with Topside Record
07	Specific Events Record

(See Appendix C for the template layout³ for each individual measure.)

*Two additional measures are soon to be incorporated.

For clarification, the output listing comprises not only the recorded data but also a detailed legend and heading explanation for an easy visual scan. (See Appendix D for a sample of the legend and data items from Measure 01.)

Optimally, data received from the Virgin Island site location can be processed within one day. Thus, within a few days, the results will be in circulation: the on-site personnel will view the fruits of their labor; the University of Texas will be able to proceed with analysis via specially configured punched data cards accompanying the listing; and the other agencies will have the opportunity to follow Tektite II progress. To date, the one-day turn-around time has been realized.

3. Data Bank Storage

Bellcomm will house the Tektite II data as it does the Tektite I data. Each week the new data is merged chronologically with the already processed Tektite II data cards. (See Appendix E for a flow chart of merge program.) These data images, residing on magnetic tapes (36 BIT-words, 556 BITS per inch, 256 word records, odd parity) are sequentially arranged according to measure identification, mission number, mission day and time.

DATA ANALYSIS

All analytical studies are being conducted by the University of Texas in Austin under the direct supervision of Dr. Robert Helmreich (Department of Psychology). However, due to the proximity of the data, analysis can also be undertaken by Bellcomm. These results will not only describe man's behavior, actions and performance within the depths of the sea; but also yield information potentially applicable to man's adaptation in outerspace. Nonetheless, at this time, analysis is the sole responsibility of the Principle Investigator, Dr. Helmreich, at Texas.



1011-MJR-mla

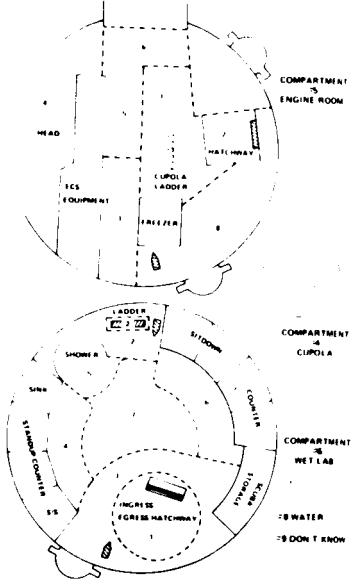
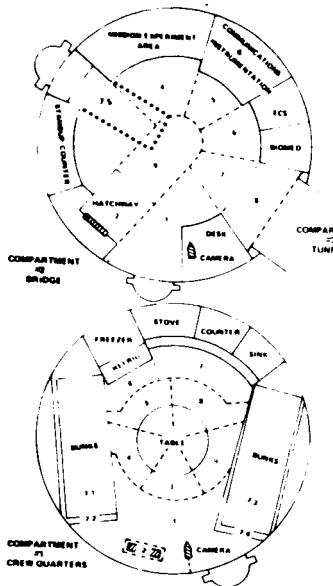
M. J. Reynolds

BELLCOMM, INC.

FOOTNOTES

1. Mach, Radloff and Zill, Tektite I Final Report, Appendix A.2 Behavioral Program, pp. 26-28.
2. R. S. Mach, Tektite II Behavioral Observers Handbook, (Case 105-5), pp. 1 and 2.
3. Ibid., pp. 5, 7, 9, 11, 19, 26 and 29.

AQUANAUT STATUS RECORD



ACTIVITY CATEGORIES	COMMUNICATION CATEGORIES	POSTURE CATEGORIES	MOVEMENT CATEGORIES
II DIRECT MARINE SCIENCE		II STANDING - ERECT	
0 MAR SCIENCE SUPPORT		0 STANDING - SLOUCHING	0 NO MOVEMENT
1 LOCOMOTING	1 NOT COMMUNICATING NEITHER TALKING NOR LISTENING	1 STANDING - LEANING	1 LIGHT TRANSLATIONAL
2 HABITAT MAINTNC AND REPAIR	2 TALKING WITH ANOTHER AQUANAUT	2 SITTING - FORWARD	2 MODERATE TRANSLATIONAL
3 SELF MAINTENANCE	3 LISTENING TO AQUANAUT #1	3 SITTING - UPRIGHT	3 VIGOROUS TRANSLATIONAL
4 MAINTENANCE OF OTHERS	4 LISTENING TO #2	4 SITTING - SLOUCHING	4 LIGHT MANIPULATIVE
5 CO RECREATION	5 LISTENING TO #3	5 RECLINING	5 MODERATE MANIPULATIVE
6 SOLITARY RECREATION	6 LISTENING TO #4	6 SQUATTING	6 VIGOROUS MANIPULATIVE
7 RELAXING, RESTING IDLING	7 LISTENING TO #5	7 KNEELING	7 LIGHT EXPRESSIVE
8 HAVING SLEEPING	8 TALKING OR LISTENING TO TOPSIDE	8 ALL FOURS	8 MODERATE EXPRESSIVE
9 DON'T KNOW		9 LYING DOWN	9 VIGOROUS EXPRESSIVE

MSR ID	HAB	MSSN DAY	TIME	COMPRTMT					SECTION					ACTIVITY					COMMUNICATION					POSTURE					MOVEMENT						
				1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5		
0		MAX							0					0					0					0					0						
1																																			
2									2					2					2					2					2					2	
3		MIN								3					3					3					3					3					3
4										4					4					4					4					4					4
5										5					5					5					5					5					5
6										6					6					6					6					6					6
7										7					7					7					7					7					7
8										8					8					8					8					8					8
9										9					9					9					9					9					9

LEGEND

MARITA

MAX. - 80 FT. HABITAT
MIN. - 100 FT. HABITAT

MISSION 10

IN NUMERICAL SEQUENCE
(FROM #1) FOR EACH HABITAT

MISSION DAY

FIRST DAY = 01, ETC.

SIVE START TIME

TIME RE: [24 HR CLOCK] TO
NEAREST MINUTE FIRST
AQUANAUT ENTERS WATER

RIG CATEGORIES

I. OPEN CIRCUIT

- 2. CLOSED CIRCUIT**
- 3. MOOKAN**
- 4. FREE**

EGR [ESS] ORDER
AT START OF TEAM DIV
AQUANAUT FIRST, 2ND,

ETC. OUT OF MAE

DIVE DURATION

**TOTAL NO. OF MINUTES
WATER BETWEEN END &**

PREPARATION FOR AND BEGINNING OF SECURING FROM DIVE

THE NEW [ECONOMIC] ORDER

AT END OF DIVE ORDER OF
AQUANAUT'S RETURN IE. IS
HE FIRST, 2ND ETC BACK
INTO HABITAT.

DIVE IDENTIFICATION

C-2

GAS USAGE

START TIME
GENERAL START TIME
LISTED IN PAPER LOG

**MAN
PUNCH HIS ID #**

RIG CATEGORIES

DIVE DURATION
DIFFERENCE IN MINUTES,
BETWEEN DIVE START AND
STOP TIMES AS LISTED IN
THE PAPER LOG

AP
**DIFFERENCE, IN POUNDS
PER SQUARE INCH GAUGED
BETWEEN PRE AND POST
DIVE GAUGE READINGS**

	HABITAT	MHR	MISSION	DAY	START TIME	DIVE #	N	T	DIVE DURATION	AP	N	T	DIVE DURATION	AP	N	T	DIVE DURATION	AP
	MAX	MIN	MAX	MIN	MAX	MAX	MIN	MAX	AP	MAX	MIN	MAX	AP	MAX	MIN	MAX	AP	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
2	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2
3	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	3
4	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	4
5	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	5
6	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0	6
7	0	0	0	0	0	7	0	0	0	0	7	0	0	0	0	0	0	7
8	0	0	0	0	0	8	0	0	0	0	8	0	0	0	0	0	0	8
9	0	0	0	0	0	9	0	0	0	0	9	0	0	0	0	0	0	9

TKI 84

MEAL

START TIME
THE TIME TO THE NEAREST MINUTE WHEN THE MAJORITY OF MEN COMPRISING THE MEAL GROUP BEGIN EATING

CODE
PREPARES THE FOOD FOR THE MEAL OF

WAITER
SETS THE TABLE AND BRINGS THE FOOD TO THE TABLE FOR

BOTTLEWASHER
CLEARSES THE TABLE AND WASHES THE DISHES OF

DURATION
LENGTH OF TIME, IN MINUTES, BETWEEN THE MAN STARTING TO EAT HIS MEAL AND LEAVING THE TABLE FOR GOOD AFTER THE MEAL

	DOOR	HABITAT	TIME	WHO PREPARED THE MEAL	WHO PREPARED THE TABLE FOR THE MEAL	MEAL DURATION	BOTTLEWASHER WHO CLEARED UP THE MEAL OF
	MAN	HABITAT	DAY	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
0	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
4	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
5	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
6	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
7	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
8	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
9	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
10	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
11	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
12	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
13	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
14	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
15	0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

THE END

ARISING-RETIRING**INSTRUCTIONS:**

THIS TEMPLATE ALLOWS PUNCHING OF TIME OF ARISING OR TIME OF RETIRING PUNCH # IN RECORD ID COLUMN WHEN PUNCHING ARISING AND #7 WHEN PUNCHING RETIRING. USE 24 HR CLOCK TIME TO THE NEAREST MINUTE.

CONVENTION-

ALTHOUGH SOME OR EVEN ALL OF THE CREW MEMBERS MAY RETIRE AFTER MIDNIGHT THE MISSION DAY ID SHOULD ALWAYS BE PUNCHED AS THE DAY ON WHICH INDIVIDUALS WOULD NORMALLY RETIRE I.E. AS ON THE DAY BEFORE MIDNIGHT...THE PREVIOUS DAY.

MAX MIN HR ID	H S A B DAY	RECORD ID	ARISING		RETIRING		AQ. #1	AQ. #2	AQ. #3	AQ. #4	AQ. #5	AQ. #6
			AM	PM	AM	PM						
0	00	00	00	00	00	00	00	00	00	00	00	00
1	00	00	00	00	00	00	00	00	00	00	00	00
2	00	00	00	00	00	00	00	00	00	00	00	00
3	00	00	00	00	00	00	00	00	00	00	00	00
4	00	00	00	00	00	00	00	00	00	00	00	00
5	00	00	00	00	00	00	00	00	00	00	00	00
6	00	00	00	00	00	00	00	00	00	00	00	00
7	00	00	00	00	00	00	00	00	00	00	00	00
8	00	00	00	00	00	00	00	00	00	00	00	00
9	00	00	00	00	00	00	00	00	00	00	00	00
10	00	00	00	00	00	00	00	00	00	00	00	00
11	00	00	00	00	00	00	00	00	00	00	00	00
12	00	00	00	00	00	00	00	00	00	00	00	00
13	00	00	00	00	00	00	00	00	00	00	00	00
14	00	00	00	00	00	00	00	00	00	00	00	00
15	00	00	00	00	00	00	00	00	00	00	00	00
16	00	00	00	00	00	00	00	00	00	00	00	00
17	00	00	00	00	00	00	00	00	00	00	00	00
18	00	00	00	00	00	00	00	00	00	00	00	00
19	00	00	00	00	00	00	00	00	00	00	00	00
20	00	00	00	00	00	00	00	00	00	00	00	00
21	00	00	00	00	00	00	00	00	00	00	00	00
22	00	00	00	00	00	00	00	00	00	00	00	00
23	00	00	00	00	00	00	00	00	00	00	00	00
24	00	00	00	00	00	00	00	00	00	00	00	00
25	00	00	00	00	00	00	00	00	00	00	00	00
26	00	00	00	00	00	00	00	00	00	00	00	00
27	00	00	00	00	00	00	00	00	00	00	00	00
28	00	00	00	00	00	00	00	00	00	00	00	00
29	00	00	00	00	00	00	00	00	00	00	00	00
30	00	00	00	00	00	00	00	00	00	00	00	00
31	00	00	00	00	00	00	00	00	00	00	00	00
32	00	00	00	00	00	00	00	00	00	00	00	00
33	00	00	00	00	00	00	00	00	00	00	00	00
34	00	00	00	00	00	00	00	00	00	00	00	00
35	00	00	00	00	00	00	00	00	00	00	00	00
36	00	00	00	00	00	00	00	00	00	00	00	00
37	00	00	00	00	00	00	00	00	00	00	00	00
38	00	00	00	00	00	00	00	00	00	00	00	00
39	00	00	00	00	00	00	00	00	00	00	00	00
40	00	00	00	00	00	00	00	00	00	00	00	00
41	00	00	00	00	00	00	00	00	00	00	00	00
42	00	00	00	00	00	00	00	00	00	00	00	00
43	00	00	00	00	00	00	00	00	00	00	00	00
44	00	00	00	00	00	00	00	00	00	00	00	00
45	00	00	00	00	00	00	00	00	00	00	00	00
46	00	00	00	00	00	00	00	00	00	00	00	00
47	00	00	00	00	00	00	00	00	00	00	00	00
48	00	00	00	00	00	00	00	00	00	00	00	00
49	00	00	00	00	00	00	00	00	00	00	00	00
50	00	00	00	00	00	00	00	00	00	00	00	00
51	00	00	00	00	00	00	00	00	00	00	00	00
52	00	00	00	00	00	00	00	00	00	00	00	00
53	00	00	00	00	00	00	00	00	00	00	00	00
54	00	00	00	00	00	00	00	00	00	00	00	00
55	00	00	00	00	00	00	00	00	00	00	00	00
56	00	00	00	00	00	00	00	00	00	00	00	00
57	00	00	00	00	00	00	00	00	00	00	00	00
58	00	00	00	00	00	00	00	00	00	00	00	00
59	00	00	00	00	00	00	00	00	00	00	00	00
60	00	00	00	00	00	00	00	00	00	00	00	00
61	00	00	00	00	00	00	00	00	00	00	00	00
62	00	00	00	00	00	00	00	00	00	00	00	00
63	00	00	00	00	00	00	00	00	00	00	00	00
64	00	00	00	00	00	00	00	00	00	00	00	00
65	00	00	00	00	00	00	00	00	00	00	00	00
66	00	00	00	00	00	00	00	00	00	00	00	00
67	00	00	00	00	00	00	00	00	00	00	00	00
68	00	00	00	00	00	00	00	00	00	00	00	00
69	00	00	00	00	00	00	00	00	00	00	00	00
70	00	00	00	00	00	00	00	00	00	00	00	00
71	00	00	00	00	00	00	00	00	00	00	00	00
72	00	00	00	00	00	00	00	00	00	00	00	00
73	00	00	00	00	00	00	00	00	00	00	00	00
74	00	00	00	00	00	00	00	00	00	00	00	00
75	00	00	00	00	00	00	00	00	00	00	00	00
76	00	00	00	00	00	00	00	00	00	00	00	00
77	00	00	00	00	00	00	00	00	00	00	00	00
78	00	00	00	00	00	00	00	00	00	00	00	00
79	00	00	00	00	00	00	00	00	00	00	00	00
80	00	00	00	00	00	00	00	00	00	00	00	00
81	00	00	00	00	00	00	00	00	00	00	00	00
82	00	00	00	00	00	00	00	00	00	00	00	00
83	00	00	00	00	00	00	00	00	00	00	00	00
84	00	00	00	00	00	00	00	00	00	00	00	00
85	00	00	00	00	00	00	00	00	00	00	00	00
86	00	00	00	00	00	00	00	00	00	00	00	00
87	00	00	00	00	00	00	00	00	00	00	00	00
88	00	00	00	00	00	00	00	00	00	00	00	00
89	00	00	00	00	00	00	00	00	00	00	00	00
90	00	00	00	00	00	00	00	00	00	00	00	00
91	00	00	00	00	00	00	00	00	00	00	00	00
92	00	00	00	00	00	00	00	00	00	00	00	00
93	00	00	00	00	00	00	00	00	00	00	00	00
94	00	00	00	00	00	00	00	00	00	00	00	00
95	00	00	00	00	00	00	00	00	00	00	00	00
96	00	00	00	00	00	00	00	00	00	00	00	00
97	00	00	00	00	00	00	00	00	00	00	00	00
98	00	00	00	00	00	00	00	00	00	00	00	00
99	00	00	00	00	00	00	00	00	00	00	00	00
100	00	00	00	00	00	00	00	00	00	00	00	00

DEFINITIONS: ARISING - WHEN AN AQUANAUT GETS OUT OF BED TO BEGIN THE DAY
RETIRING - WHEN THE AQUANAUT GETS INTO HIS BUNK FOR THE NIGHT

OVERNIGHT SLEEP DURATION

MISSION DAY	RECORD ID	MAX		MIN		00		01		02		03		04		05		06	
		A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S
0	0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3	3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4	4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5	5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
6	6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7	7	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8	8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
9	9	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

INSTRUCTIONS:

WHEN PUNCHING THE MISSION DAY ALWAYS PUNCH THE DAY ON WHICH THE SLEEP PERIOD IN QUESTION ENDED.

THE DURATION IS THE TOTAL NUMBER OF MINUTES FOLLOWING THE TIME OF RETIRING THE NIGHT BEFORE UNTIL THE TIME OF ARISING ON THE MORNING OF THE RECORD.

COMMUNICATIONS WITH TOPSIDE

START TIME
TO NEAREST MINUTE
A COMMUNICATION BETWEEN
HABITAT AND TOPSIDE
PERSONNEL

INIT (IATOR)

DID THE HABITAT OR DID
TOPSIDE INITIATE THE
COMMUNICATION

DEVICE CATEGORIES

1. OPEN MICROPHONE
(PUBLIC)
2. INTERCOM (SEMI-PRIV.)
3. DOOR (PRIVATE)
4. VIDEO PHONE

**DURATION OF COMMUN.
CATEGORIES**

1. 20-40 SEC
2. 40 SEC - 1 MIN
3. 1-2 MIN
4. 2-3
5. 3-5
6. 5-7
7. 7-10
8. 10-15
9. 15-20

CONTENT

WAS THE MAJORITY OF TIME
SPENT IN THE COMMUNICATION
DEVOTED TO OPERATIONAL
OR SOCIAL TOPICS

MISSION	DAY	START TIME	AQ #1		AQ #2		AQ #3		AQ #4		AQ #5	
			HABITAT	DEVICE								
10	MAX											
	0											
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											

EVENT IDENTIFICATION

G general category

S specific "

MH maintenance of habitat

- 1 housekeeping
 2 habit. maint.
 3 " repair
 4 baralime change

M

MSO maint self/others MSR

H S

- 1 head usage
 2 showering
 3 laundry
 4 handling food stores

A S

DAY

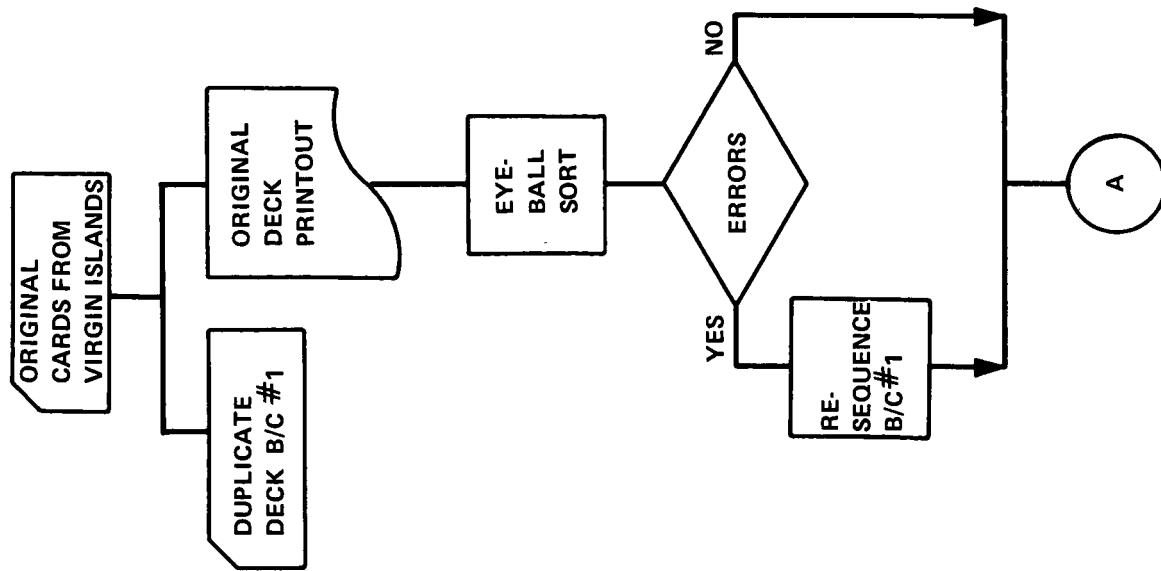
EVENT

	A	Q	1	SPECIFIC EVENT RECORD			A	Q	4	A	Q	5
				freq	duration	freq						
	G	S	P	C	G	S	P	C	G	S	P	C
1 head usage	1	0	0	0	0	0	0	0	0	0	0	0
2 showering	1	0	0	0	0	0	0	0	0	0	0	0
3 laundry	1	0	0	0	0	0	0	0	0	0	0	0
4 handling food stores	1	0	0	0	0	0	0	0	0	0	0	0
UF use of facilities												
1 tv outside	1	0	0	0	0	0	0	0	0	0	0	0
2 tv tapes/ entrainment	1	0	0	0	0	0	0	0	0	0	0	0
3 tv " maintnc	1	0	0	0	0	0	0	0	0	0	0	0
4 radio	1	0	0	0	0	0	0	0	0	0	0	0
5 general leisure	1	0	0	0	0	0	0	0	0	0	0	0
oakage hardware	1	0	0	0	0	0	0	0	0	0	0	0
6 personal leisure items	1	0	0	0	0	0	0	0	0	0	0	0
7 pressure pot	1	0	0	0	0	0	0	0	0	0	0	0
8 winch	1	0	0	0	0	0	0	0	0	0	0	0
FREQ no. times per day aquanaut does above	1	0	0	0	0	0	0	0	0	0	0	0
TOTAL DURATION G gen. cat.	1	0	0	0	0	0	0	0	0	0	0	0
0 less than 3min	5	45 - 60										
1 3 - 10	6	60 - 90										
2 10 - 20	7	90 - 120										
3 20 - 30	8	120 - 150										
4 30 - 45	9	Greater than 150										

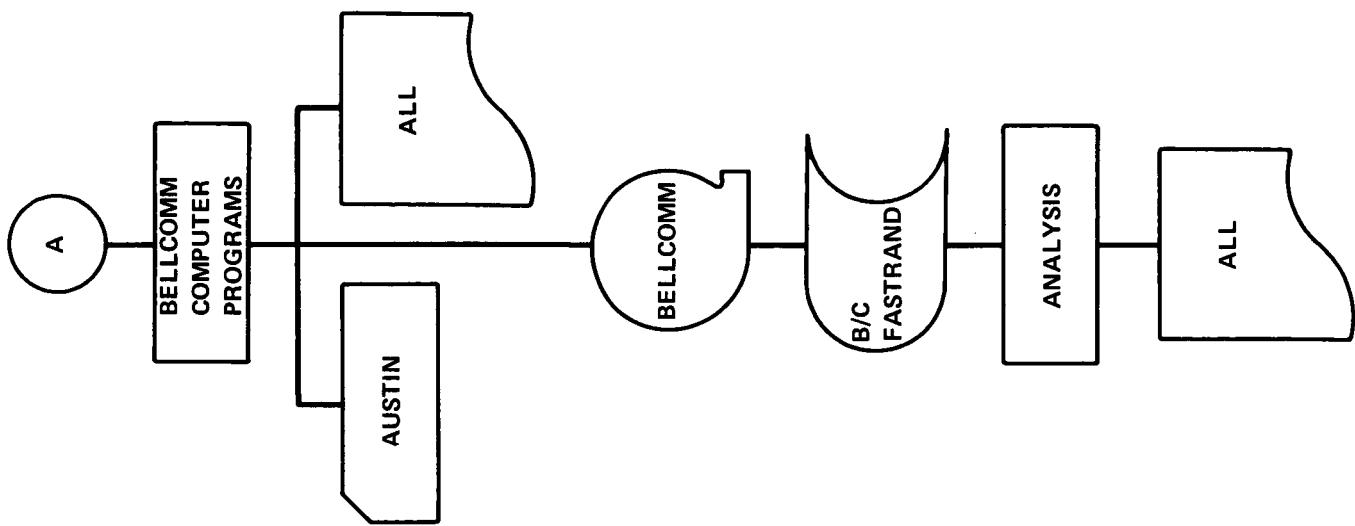
SPC, specific if available

THRM

DATA FLOW

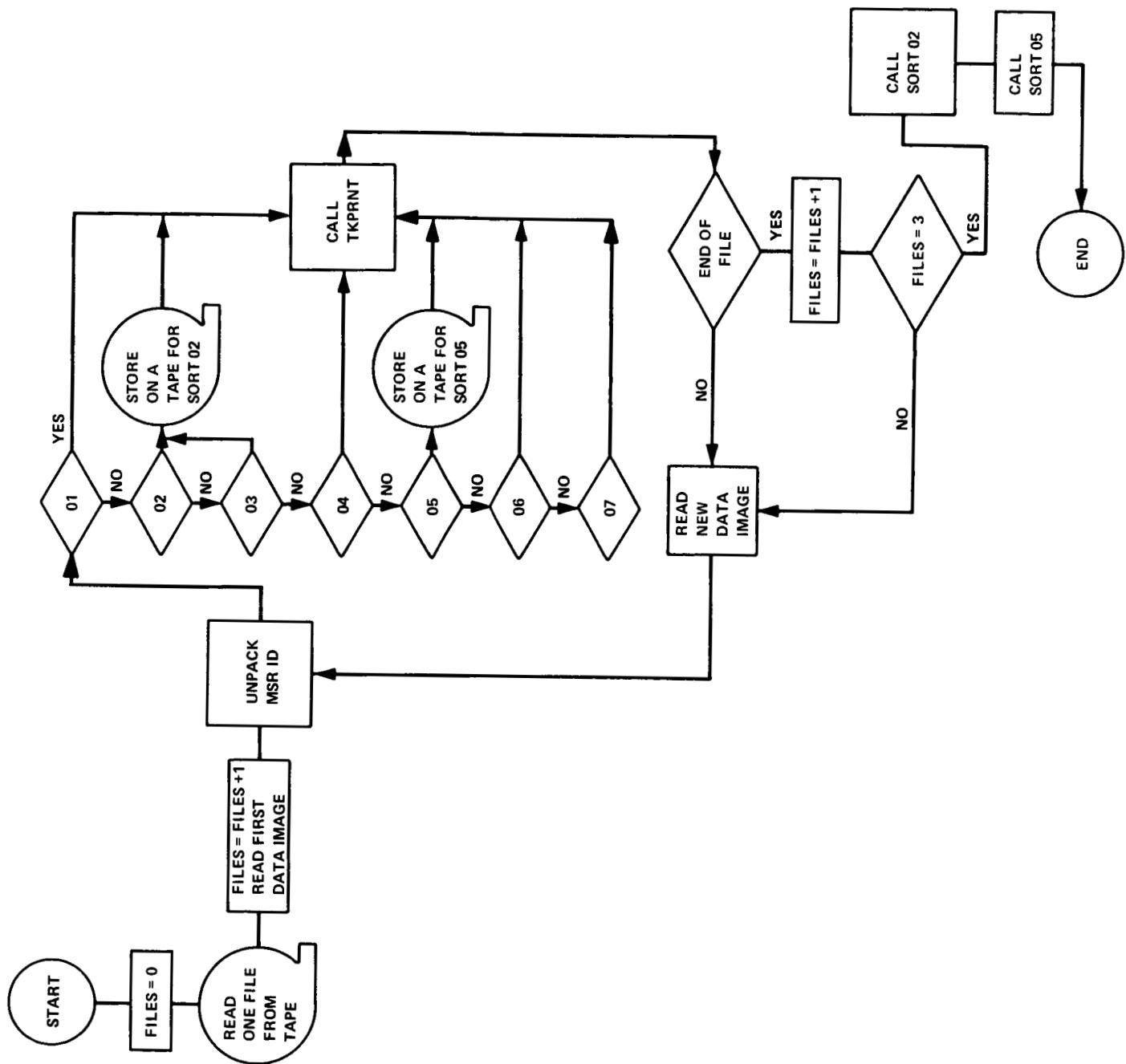


APPENDIX A

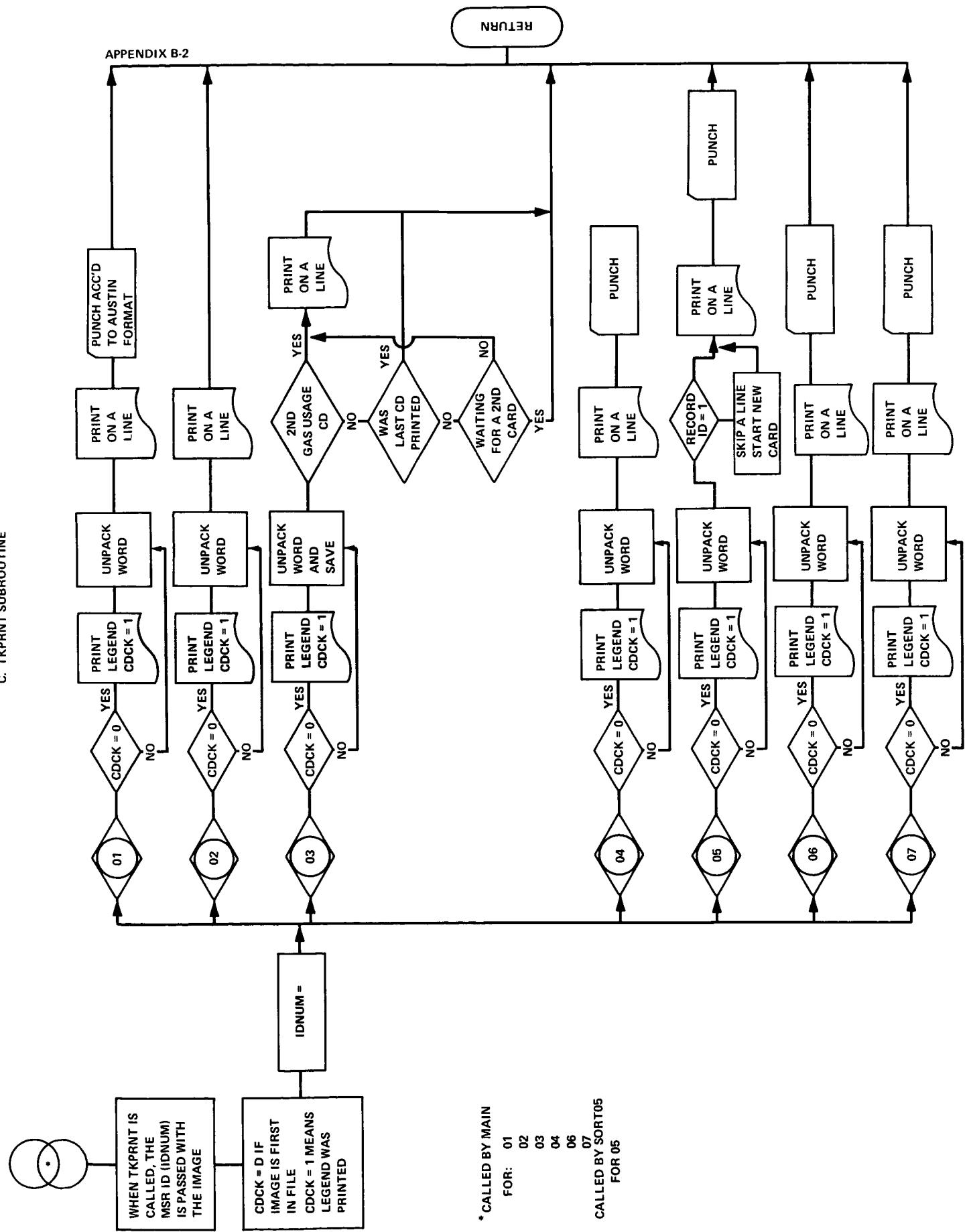


A FORMAT PROGRAM

APPENDIX B-1



C. TKPRNT SUBROUTINE



SUPPLEMENTARY INFORMATION

APPENDIX D

TENTATIVE

AQUANAUT STATUS REPORT

LEGEND:

QUARTER (QAP)

= MAXITAT

= MINITAT

= APRIL 4 - APRIL 16

= APRIL 22 - MAY 7

= MAY 7 - MAY 27

= MAY 27 - JUNE 17

= JULY 6 - JULY 21

= JULY 18 - JULY 4

= JULY 24

= AUGUST 11

= OCTOBER 12

= NO QUARTER

ACTIVITY (A)

SECTION(S)

ACTIVITY (A)

COMPARTMENT (C)

ACTIVITY (A)

NO MOVEMENT

= LIGHT TRANSLATIONAL

= MODERATE TRANSLATIONAL

= VIGOROUS TRANSLATIONAL

= LIGHT MANIPULATIVE

= MODERATE MANIPULATIVE

= VIGOROUS MANIPULATIVE

= LIGHT EXPRESSIVE

= MODERATE EXPRESSIVE

= VIGOROUS EXPRESSIVE

MOVEMENT (M)

1 = NO MOVEMENT

2 = LIGHT TRANSLATIONAL

3 = MODERATE TRANSLATIONAL

4 = VIGOROUS TRANSLATIONAL

5 = LIGHT MANIPULATIVE

HAB MSSN DAY TIME

AQUANAUT #1

AQUANAUT #2

AQUANAUT #3

AQUANAUT #4

AQUANAUT #5

AQUANAUT #6

AQUANAUT #7

AQUANAUT #8

AQUANAUT #9

AQUANAUT #10

AQUANAUT #11

AQUANAUT #12

AQUANAUT #13

AQUANAUT #14

AQUANAUT #15

AQUANAUT #16

AQUANAUT #17

AQUANAUT #18

AQUANAUT #19

AQUANAUT #20

AQUANAUT #21

AQUANAUT #22

AQUANAUT #23

AQUANAUT #24

AQUANAUT #25

AQUANAUT #26

AQUANAUT #27

AQUANAUT #28

AQUANAUT #29

AQUANAUT #30

AQUANAUT #31

AQUANAUT #32

AQUANAUT #33

AQUANAUT #34

AQUANAUT #35

AQUANAUT #36

AQUANAUT #37

AQUANAUT #38

AQUANAUT #39

AQUANAUT #40

AQUANAUT #41

AQUANAUT #42

AQUANAUT #43

AQUANAUT #44

AQUANAUT #45

AQUANAUT #46

AQUANAUT #47

AQUANAUT #48

AQUANAUT #49

AQUANAUT #50

AQUANAUT #51

AQUANAUT #52

AQUANAUT #53

AQUANAUT #54

AQUANAUT #55

AQUANAUT #56

AQUANAUT #57

AQUANAUT #58

AQUANAUT #59

AQUANAUT #60

AQUANAUT #61

AQUANAUT #62

AQUANAUT #63

AQUANAUT #64

AQUANAUT #65

AQUANAUT #66

AQUANAUT #67

AQUANAUT #68

AQUANAUT #69

AQUANAUT #70

AQUANAUT #71

AQUANAUT #72

AQUANAUT #73

AQUANAUT #74

AQUANAUT #75

AQUANAUT #76

AQUANAUT #77

AQUANAUT #78

AQUANAUT #79

AQUANAUT #80

AQUANAUT #81

AQUANAUT #82

AQUANAUT #83

AQUANAUT #84

AQUANAUT #85

AQUANAUT #86

AQUANAUT #87

AQUANAUT #88

AQUANAUT #89

AQUANAUT #90

AQUANAUT #91

AQUANAUT #92

AQUANAUT #93

AQUANAUT #94

AQUANAUT #95

AQUANAUT #96

AQUANAUT #97

AQUANAUT #98

AQUANAUT #99

AQUANAUT #100

AQUANAUT #101

AQUANAUT #102

AQUANAUT #103

AQUANAUT #104

AQUANAUT #105

AQUANAUT #106

AQUANAUT #107

AQUANAUT #108

AQUANAUT #109

AQUANAUT #110

AQUANAUT #111

AQUANAUT #112

AQUANAUT #113

AQUANAUT #114

AQUANAUT #115

AQUANAUT #116

AQUANAUT #117

AQUANAUT #118

AQUANAUT #119

AQUANAUT #120

AQUANAUT #121

AQUANAUT #122

AQUANAUT #123

AQUANAUT #124

AQUANAUT #125

AQUANAUT #126

AQUANAUT #127

AQUANAUT #128

AQUANAUT #129

AQUANAUT #130

AQUANAUT #131

AQUANAUT #132

AQUANAUT #133

AQUANAUT #134

AQUANAUT #135

AQUANAUT #136

AQUANAUT #137

AQUANAUT #138

AQUANAUT #139

AQUANAUT #140

AQUANAUT #141

AQUANAUT #142

AQUANAUT #143

AQUANAUT #144

AQUANAUT #145

AQUANAUT #146

AQUANAUT #147

AQUANAUT #148

AQUANAUT #149

AQUANAUT #150

AQUANAUT #151

AQUANAUT #152

AQUANAUT #153

AQUANAUT #154

AQUANAUT #155

AQUANAUT #156

AQUANAUT #157

AQUANAUT #158

AQUANAUT #159

AQUANAUT #160

AQUANAUT #161

AQUANAUT #162

AQUANAUT #163

AQUANAUT #164

AQUANAUT #165

AQUANAUT #166

AQUANAUT #167

AQUANAUT #168

AQUANAUT #169

AQUANAUT #170

AQUANAUT #171

AQUANAUT #172

AQUANAUT #173

AQUANAUT #174

AQUANAUT #175

AQUANAUT #176

AQUANAUT #177

AQUANAUT #178

AQUANAUT #179

AQUANAUT #180

AQUANAUT #181

AQUANAUT #182

AQUANAUT #183

AQUANAUT #184

AQUANAUT #185

AQUANAUT #186

AQUANAUT #187

AQUANAUT #188

AQUANAUT #189

AQUANAUT #190

AQUANAUT #191

AQUANAUT #192

AQUANAUT #193

AQUANAUT #194

AQUANAUT #195

AQUANAUT #196

AQUANAUT #197

AQUANAUT #198

AQUANAUT #199

AQUANAUT #200

AQUANAUT #201

AQUANAUT #202

AQUANAUT #203

AQUANAUT #204

AQUANAUT #205

AQUANAUT #206

AQUANAUT #207

AQUANAUT #208

AQUANAUT #209

AQUANAUT #210

AQUANAUT #211

AQUANAUT #212

AQUANAUT #213

AQUANAUT #214

AQUANAUT #215

AQUANAUT #216

AQUANAUT #217

AQUANAUT #218

AQUANAUT #219

AQUANAUT #220

AQUANAUT #221

AQUANAUT #222

AQUANAUT #223

AQUANAUT #224

AQUANAUT #225

AQUANAUT #226

AQUANAUT #227

AQUANAUT #228

AQUANAUT #229

AQUANAUT #230

AQUANAUT #231

AQUANAUT #232

AQUANAUT #233

AQUANAUT #234

AQUANAUT #235

AQUANAUT #236

AQUANAUT #237

AQUANAUT #238

AQUANAUT #239

AQUANAUT #240

AQUANAUT #241

AQUANAUT #242

AQUANAUT #243

AQUANAUT #244

AQUANAUT #245

AQUANAUT #246

AQUANAUT #247

AQUANAUT #248

AQUANAUT #249

AQUANAUT #250

AQUANAUT #251

AQUANAUT #252

AQUANAUT #253

AQUANAUT #254

AQUANAUT #255

AQUANAUT #256

AQUANAUT #257

AQUANAUT #258

AQUANAUT #259

AQUANAUT #260

AQUANAUT #261

AQUANAUT #262

AQUANAUT #263

AQUANAUT #264

AQUANAUT #265

AQUANAUT #266

AQUANAUT #267

AQUANAUT #268

AQUANAUT #269

MERGE PROGRAM

APPENDIX E

